

**Appl. No. 09/787,303**  
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**Reply to Office Action of March 2, 2004**

**REMARKS**

Applicants thank Examiner Rhee and Examiner Thomas for their time and courtesies extended to Applicants' representation during the Interview of May 27, 2004. Applicants believe that the Interview has advanced prosecution of the present application. Various ways of addressing the sole prior art rejection were discussed, and suggestions were discussed to overcome the prior art.

It is respectfully requested that the present Reply be entered into the Official File in view of the fact that the Reply places the application in condition for allowance. Thus, the present Reply is believed to be in proper form for placing the application in condition for allowance.

Amended claim 18 presents no new issues requiring further search or consideration, because amended claim 18 simply incorporates the already-considered subject matter of claim 19. Claim 19 has been canceled. Thus, claims of the same scope have previously been presented and subsequently examined.

In the alternative, if the Examiner continues with the rejections of the present application, it is respectfully requested that the present Reply be entered for purposes of an Appeal. The Reply reduces the issues on appeal by reducing the number of claims and/or overcoming the rejection of at least some of the claims under 35 U.S.C. § 103(a). Thus, the issues on appeal would be reduced.

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Applicants respectfully request the Examiner to reconsider the present application in view of the foregoing amendments to the claims. Claim 19 has been canceled without prejudice or disclaimer of the subject matter contained therein. Claim 18 has been amended by incorporating the canceled subject matter. Thus, no new matter and no new issues are raised with the present amendment. In the present application, claims 1-3 and 5-18 are pending. Claims 5-8 remain withdrawn.

Based upon the above considerations, entry of the present amendment is respectfully requested. In view of the following remarks, Applicants respectfully request that the Examiner withdraw the only rejection and allow the currently pending claims.

#### ***Summary of the Interview***

Pursuant to M.P.E.P. § 713.04, Applicants provide the following.

During the above-mentioned Interview, Applicants maintained their position that a *prima facie* case of obviousness has not been formed and that unexpected results exist for the present invention. Specifically, Applicants presented arguments of patentability related to how one having ordinary skill in the art, upon reading the cited reference (discussed in more detail below), would not be motivated or reasonably expect to be successful in achieving the present invention. Further, Applicants referred the Examiner to the previously filed Rule 132

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Declaration by co-inventor Yamada that contains evidence of unexpected results for the present invention.

The contents of the Rule 132 Declaration were discussed, including Figure B depicting the product of Ebnesajjad '639 (U.S. Patent Number 5,683,639) versus that of the present invention. Applicants also asserted that the one having ordinary skill in the art, upon reading Ebnesajjad '639 would achieve a molded article such as the one shown in Figure B, Experiment A-1, of the Rule 132 Declaration, which contains a large amount of deformation and not that of the present invention (also shown in Figure B). Applicants maintained, e.g., that the requisite reasonable expectation of success is lacking as evidenced by the Rule 132 Declaration.

Applicants respectfully maintain their position that the present invention is patentably distinct from the cited Ebnesajjad '639, as discussed below. ~

**Issues Under 35 U.S.C. § 103(a)**

Claims 1-3 and 9-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ebnesajjad '639 (U.S. Patent Number 5,683,639). It has been clarified during the above-mentioned Interview that claims 1-3 and 9-19 are at issue, and not claims 18-19 as indicated at paragraph 2 of the outstanding Office Action. Applicants respectfully

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traverse this rejection, and reconsideration and withdrawal are respectfully requested.

Summary of Examiner's Position

Ebnesajjad '639 discloses a certain melt viscosity and a polytetrafluoroethylene (PTFE) molded article which is cylindrical and having a height of 89 mm (see the Office Action, paragraph 2, page 2). It is asserted that the claimed height of at least 800 mm (*i.e.*, see instantly pending claim 1) is obvious to one having ordinary skill in the art, since "A change in size is generally recognized as being within the level of ordinary skill in the art" (see paragraph 2 of the Office Action, page 2).

Further, since Ebnesajjad '639 "discloses a similar melt viscosity ... and since the size is rendered obvious, the deformation amount is expected to be similar" (see paragraph 4, page 5, lines 11-13).

Also, at paragraph 3 (page 4) of the Office Action, the Examiner states that the previously filed Rule 132 Declaration (filed with the reply of November 26, 2003) includes statements which amount to an affirmation that the claimed subject matter functions as it was intended to function.

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Summary of Applicants' Position

Applicants respectfully maintain their position that the present invention is patentably distinct from the cited Ebnesajjad '639 reference because (i) a *prima facie* case of obviousness has not been formed, and (ii) unexpected results for the present invention rebut any asserted *prima facie* case of obviousness.

With regard to (i) above, Applicants submit that Ebnesajjad '639 fails to disclose all features as instantly claimed, including the recited height and polygon area. Applicants further submit that size does not involve a routine skill for the art corresponding to the present invention. Also, the requisite motivation and/or reasonable expectation of success are lacking, as evidenced by the Rule 132 Declaration and the previously filed "Exhibit A" by Applicants (most recently filed with the reply of August 1, 2003). For instance, one having ordinary skill in the art would not reasonably expect to be successful in achieving the present invention since, as shown as "Experiment A-1" in Fig. B in the Declaration, a molded article having significant deformity would be achieved and not the present invention (shown to the right in Fig. B). As another example, Applicants maintain that the skilled artisan would not be motivated in modifying Ebnesajjad '639 so as to achieve the present invention since the larger billet of Ebnesajjad '639 would exhibit larger deformation amounts than the

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deformation amount (that is, 7%) defined in the presently pending claim 1, and as shown in the figure of "Exhibit A".

With regard to (ii) above, Applicants have referred the Examiner to the comparative examples in the present specification and submitted the mentioned Rule 132 Declaration as evidence of unexpected results for the present invention. Applicants have also compared the present invention to the closest prior art example of Ebnesajjad '639 (see the Rule 132 Declaration contents). Thus, Applicants submit that any asserted *prima facie* case of obviousness has been rebutted with these showings of unexpected results for the present invention.

The Present Invention is Patentably Distinct

The Examiner states that Ebnesajjad '639 discloses every feature of the present invention except the claimed height feature. Applicants respectfully traverse that Ebnesajjad '639 discloses the present invention as asserted and further submit that a *prima facie* case of obviousness has not been established based on this reference.

Applicants initially submit that when the USPTO issues a rejection of claims under 35 U.S.C. § 103(a), a patent applicant has the opportunity to rebut such any asserted *prima facie* case of obviousness by pointing out how one or more of the requirements for a *prima facie* case of obviousness has not been satisfied (i.e., the requisite motivation), or by a showing of unexpected results that rebuts any

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asserted *prima facie* case of obviousness. In this regard, Applicants have rebutted the asserted *prima facie* case of obviousness in both ways.

(A) *A Prima Facie Case of Obviousness Has Not Been Established: Lack of Disclosure of All Claimed Features*

Applicants have previously pointed out how all requirements for a *prima facie* case of obviousness have not been satisfied (see, e.g., Applicants' reply of August 1, 2003 starting at page 10). In this regard, Applicants submit that an analysis under 35 U.S.C. § 103(a) requires a determination of the scope and content of the prior art, *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). In determining the scope and content of the prior art as required by *Graham v. John Deere Co.*, an evaluation of the claimed subject matter as a whole in the light of the differences between the disputed pending claims of the present invention and the cited Ebnesajjad '639 reference reveals that Ebnesajjad '639 is limited in scope of its disclosure of the present invention. Specifically, there is no disclosure or recognition of the features of, e.g., the claimed height or the melt viscosity and block deformation amount contained within a polygonal region as instantly claimed in Ebnesajjad '639. Further, the cited Ebnesajjad '639 reference fails to disclose or suggest how to make a PTFE cylinder having a length of at least 800 mm as instantly claimed.

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As explained below, the cited Rose is inapplicable because size is involves more than a routine skill in the pertinent art.

Applicants specifically recite many features in the instantly pending claims, including structural features as follows:

- the polytetrafluoroethylene block-shaped molded article has a melt viscosity and
- a block deformation amount
- contained within a polygonal region surrounded by
- a straight line A:  $x = 1.0 \times 10^9$  (melt viscosity of  $1.0 \times 10^9$  poise),
- a straight line B:  $x = 2.5 \times 10^{10}$  (melt viscosity of  $2.5 \times 10^{10}$  poise),
- a straight line C1:  $y = 7.0$  (block deformation amount of 7.0%),
- a straight line D1:  $y = 0$  (block deformation amount of 0%),
- a straight line E1:  $y = -8.7 \log_{10}(x) + 91$ ,

the straight lines being in a graph with an x-axis as a common logarithm of the melt viscosity (poise) at 380°C of polytetrafluoroethylene and a y-axis as the block deformation amount (%) which is a weight loss until a stable film or sheet is cut from the molded article.

All of these features have not been accounted for in the previous Office Actions. Also, the Office Action at paragraph 2, page 3, lines 1-14, states that these recited features (at least with regard to pending claims 18-19) constitute a process limitation. Applicants respectfully



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and heavily disagree with this assertion. Applicants have referred to "Exhibit A" as evidence that such recited features are outside the scope of the cited Ebnesajjad '639 reference, and that one having ordinary skill in the art upon reading Ebnesajjad '639 reference would not achieve the properties and features of the instantly claimed molded article.

In addition, the Examiner essentially states in almost every USPTO correspondence that if Ebnesajjad '639 and the present invention have the same melt viscosity, then the deformation amounts would also be the same, since Ebnesajjad '639 teaches the amount of deformation is to some degree a function of the melt viscosity of PTFE (see the current Final Office Action at page 5, lines 9-13; the Office Action of August 28, 2003 at page 5, lines 7-0; the Advisory Action at page 3, lines 8-11; etc.). Applicants also respectfully disagree with this assertion, and further submit that the amount of deformation as a function of the melt viscosity does not equate to disclosure of deformation of a PTFE tube as Applicants have previously argued (see Applicants' reply of November 26, 2003, at pages 11-14).

Further, Applicants have also explained the relationship to the size of the article to deformation amounts and melt viscosities (see the Rule 132 Declaration), and that the skilled artisan cannot achieve the present invention upon a reading of Ebnesajjad '639 (even with the disclosed melt viscosity). Specifically, in the previously filed Rule

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132 Declaration by co-inventor Masahiko Yamada, Applicants have explained Figure A of the Rule 132 Declaration does show a relationship between the a) deformation amount (%) and b) block length and c) melt viscosity. For instance, when varying the melt viscosity between  $6.55 \times 10^9$  versus  $1.32 \times 10^{10}$  poise but keeping the block length relatively the same (between 1000 and 1100 mm), there is a difference in the amount of deformation (%) as can be seen in Figure A (about 3% for the  $1.32 \times 10^{10}$  poise; three values shown that fall within the range of about 4% to about 7% for  $6.55 \times 10^9$  poise).

Also, what Figure A in the Rule 132 Declaration depicts is that the amount of deformation (%) increases when the block length increases for both melt viscosity values, wherein there is more pronounced deformation when the melt viscosity is the  $6.55 \times 10^9$  poise (no articles over a block length of about 1100 mm appear in Figure A). These differences and the relationship between a) deformation amount (%) and b) block length and c) melt viscosity were also explained by Applicants in the reply dated November 26, 2003 (see starting page 10) (Figure A was also discussed during the May 27<sup>th</sup> Interview mentioned above).

Also, Applicants previously filed "Exhibit A", which was attached to Applicants' reply of July 10, 2003, as well as a Rule 132 Declaration by co-inventor Masahiko Yamada, which was submitted with Applicants' reply dated November 26, 2003. The mentioned Exhibit A details how the Ebnesajjad '639 process leads to a molded product that necessarily falls

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outside the scope of the present invention. Also, as further evidence of patentability, Applicants filed Mr. Yamada's Rule 132 Declaration to demonstrate that the present invention does produce a different molded article and is patentably distinct from the cited Ebnesajjad '639 reference.

In fact, Applicants have previously asserted that the claimed feature of a height of at least 800 mm is a patentably distinct feature. However, the Examiner has maintained that size is not a patentable feature and cited the *In re Rose* case (105 USPQ 237). Applicants submit this is an inappropriate assessment.

The generalization that size is not a patentably distinct feature cannot apply to all fields of technology, e.g., nanotechnology or the field that includes the present invention. Applicants have pointed out how the cited *In re Rose* decision is inapplicable to the instant situation since this decision is fact-specific whereby one of ordinary skill in the art deals with the art of lumber (see Applicants' reply of August 1, 2003, starting at page 8). Applicants herein maintain their position that *Rose* does not apply here, and that the present invention is patentable distinct for the above reasons. Further, the CCPA in *Rose* referred to *In re Yount* when discussing size as ordinarily not being a matter of invention (105 USPQ at 240), wherein the *Yount* court referred to *In re Kirke* when stating that "mere size is not ordinarily a matter of invention". 80 USPQ 141, 143 (citing *In re Kirke*, 5 USPQ 539).

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However, in referring to size as not a matter of invention, the *Yount* court also referred to how the "appellant by his own specification teaches that small bags are the equivalent of large bags, he is not in a favorable position to argue for any invention in one as distinguished from the other." 80 USPQ at 143 (citing *In re Ayres*, 29 USPQ 424 and *In re Withington*, 41 USPQ 742). Applicants maintain that based on these facts and application of principles, the *In re Rose* decision is being incorrectly applied to the present invention, and that one of ordinary skill in the PTFE molded article art would not consider size as a routine skill. Ebnesajjad '639 does not even achieve a molded article having a size as instantly claimed. Therefore, Applicants respectfully submit that not all instantly claimed features of the present invention can be accounted for by application of the *In re Rose* case.

Applicants also maintain their position that one of ordinary skill in this art understands the problem that a bigger article deforms during sintering due to the weight of the article itself (see Applicants' reply of August 2, 2003 starting at page 9). For instance, as shown in Comparative Examples 1-3 of the present specification, when the height of the article is large, the load at unit area of base or bottom of the article is high (for instance, see page 14, lines 15-17 of the specification) so that the article deforms during the sinter process. In contrast, the present invention has achieved a large PTFE molded article

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block having less distortion and small strain is produced (see the Examples in specification).

Applicants respectfully maintain their position that the present invention is patentably distinguishable from the cited Ebnesajjad '639 reference for the further reasons stated in Applicants' reply of July 10, 2003. Therefore, Applicants respectfully submit that size is not a routine skill in the art and that the present invention is patentably distinct from the cited Ebnesajjad '639 reference.

If the Examiner continues to maintain that size involves a routine skill in the art corresponding to the present invention, Applicants again challenge this assertion. To maintain that "A change in size is generally recognized as being within the level of ordinary skill in the art" (paragraph 2, page 2 of the outstanding Office Action), Applicants request that the Examiner produce (scientific) evidence to support this assertion beyond the *Rose* decision for the present technology. Alternatively, if the Examiner is relying upon personal knowledge to support the finding of what is known in this art, the Examiner is respectfully requested to provide an affidavit or declaration setting forth specific factual statements and explanations to support such an assertion. In this regard the Examiner is referred to 37 C.F.R. §1.104(d)(2).

Thus, under *In re Vaeck*, a *prima facie* case of obviousness has not been established since there is no disclosure of all claimed features in Ebnesajjad '639, which is one of the requirements for a *prima facie* case

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of obviousness. 947 F.2d, 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). Applicants further submit that the disclosure in Ebnesajjad '639 still does not equal disclosure of all claimed features, such as the recited height and polygon region. Ebnesajjad '639 is deficient in several respects. In addition, Applicants maintain their position that the claimed height is a patentably distinct feature over the cited Ebnesajjad '639 reference. Applicants add that there is a presumption of patentability given to the patent applicant, and that no reference has been discovered that discloses all features as instantly claimed (*i.e.*, see the features of pending claim 1).

*(B) A Prima Facie Case of Obviousness Has Not Been Established: Lack of Requisite Reasonable Expectation of Success*

Applicants further submit that the requisite reasonable expectation of success is also lacking so that a *prima facie* case of obviousness has not been established. See *In re Vaeck*. Here, one having ordinary skill in the art would not reasonably expect to be successful, upon a reading of Ebnesajjad '639 of achieving the present invention since Ebnesajjad '639 merely discloses a process that only achieves a tube having a height of 64 mm (see Example 2 at Col. 7) or 8.9 cm (Control F at Col. 8). Though the Examiner asserts "size" (in any technological field) involves a routine skill, no evidence has been provided to support this assertion and Applicants submit that the skilled artisan would encounter

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significant problems, such as large amounts of deformity in the molded article, in attempting to achieve the present invention. Applicants have even provided evidence that such deformities occur when one having ordinary skill in the art attempts what is disclosed in Ebnesajjad '639 in making the instantly claimed, larger product (see Figure B in the previously filed Rule 132 Declaration). Applicants also point to the fact that the USPTO has not found a reference that discloses Applicants' instantly claimed product having less deformity and that is larger in height (i.e., as defined in pending claim 1). This is due to the problems associated with this art. Thus, Applicants respectfully submit that the skilled artisan would not reasonably expect to be successful in achieving the present invention upon a reading of the cited Ebnesajjad '639 reference.

Accordingly, Applicants respectfully submit that not all requirements for a *prima facie* case of obviousness have been satisfied. Reconsideration and withdrawal of this rejection are respectfully requested.

*(C) A Prima Facie Case of Obviousness Has Not Been Established: Lack of Requisite Motivation*

Applicants also submit that the requisite motivation is lacking. Ebnesajjad '639 has been modified to disclose all claimed features of the present invention, including the claimed height of the molded

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article. The recited features of the melt viscosity and deformation amount as defined by the polygon region is not given patentable weight (at least for claims 18-19; see page 3 of the Office Action), which Applicants submit is improper for the reasons mentioned above. Previously filed Exhibit A is evidence that the properties of the Ebnesajjad '639 billet falls outside the scope of what is instantly claimed.

Thus, the instant rejection under 35 U.S.C. § 103(a) is improper since a *prima facie* case of obviousness has not been established, and Appellant respectfully requests the Examiner to reverse this rejection.

*(D) Unexpected Results of the Present Invention and Other Distinctions*

With regard to unexpected results for the present invention, Applicants have already shown such results. Further, Applicants have properly compared to the closest prior art example, which the Examiner considers to be that of Ebnesajjad '639. The comparative showing need not compare the claimed invention with all of the cited prior art, but only with the closest prior art. See M.P.E.P. §§ 716.02(b) and 716.02(e). Here, Applicants have submitted the Rule 132 Declaration as evidence of unexpected results of the present invention (see Figure B comparing Ebnesajjad '639 of "Experiment A-1" versus that of the present invention).



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(E) Claims 18-19

Applicants also respectfully request reconsideration of claims 18-19, where the recited process steps do impart structural features to the claimed product. See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1969). Though the Examiner refers Applicants to the melt viscosity disclosure in Ebnesajjad '639, Applicants respectfully refer the Examiner to the Rule 132 Declaration as evidence that there is less deformation in the larger sized articles for the present invention.

Applicants also submit that a patent applicant should be given the presumption of patentability and that the USPTO has yet to find a reference that does in fact disclose all features of the present invention (i.e., including all features of instantly pending claims 18-19, as well as claim 1 and its dependent claims).

Thus, Applicants respectfully submit that the rejection under 35 U.S.C. § 103(a) has been overcome.

### **Conclusion**

A full and complete response has been made to all issues as cited in the Office Action. Applicants have taken substantial steps in efforts to advance prosecution of the present application. Thus, Applicants respectfully request that a timely Notice of Allowance issue for the present case.

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Should there be any outstanding matters that need to be resolved in the present application, or in an effort to advance prosecution, the Examiner is respectfully requested to contact Eugene T. Perez (Reg. No. 48,501) at the telephone number of the undersigned below, to conduct an interview in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment(s)